PUBLIC NOTICE

Federal Communications Commission
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State Forward-Looking Cost Studies
for Federal Universal Service Support
CC Docket Nos. 96-45 and 97-160

In the *Universal Service Order*,[1] the Commission concluded that states could submit forward-looking economic cost studies as the basis for calculating federal universal service high cost support for non-rural carriers in lieu of using the federal mechanism for determining federal universal service high cost support for non-rural carriers.[2] The Commission adopted specific criteria to guide the states as they conduct those studies. The Commission will review each study submitted by a state, along with applicable comments. If the Commission finds that a state cost study meets the specified criteria, the Commission will approve such study for use in calculating federal support for non-rural eligible telecommunications carriers in rural, insular, and high cost areas in accordance with the *Universal Service Order*. If a state cost study fails to meet the criteria adopted in the *Universal Service Order*, or if a state does not submit a study, the Commission will determine non-rural carriers' forward-looking economic cost of providing universal service in that state according to the Commission's forward-looking cost methodology.

In this Public Notice, we set forth the information we need to evaluate whether a state's cost study complies with the criteria set forth in the *Universal Service Order*. To enable the Commision to make its determination in a timely fashion, we also set forth the manner in which this information should be presented.[3] This uniform filing format, developed with the assistance of the Joint Board, is to be used by all states submitting cost studies,[4] and should simplify and standardize the submission and review of state cost studies for the Commission, the states, and other interested parties.

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[1] Federal-State Joint Board on Universal Service, *Report & Order*, 12 FCC Rcd 8776 (1997) (*Universal Service Order*).

[2] *Id.* at 8911 para. 24.

[3] *See Universal Service Order*, 12 FCC Rcd at 8912 para. 248 ("We will also work together with the states and the Joint Board to develop a uniform cost study review plan that would standardize the format for presentation of cost studies in order to facilitate review by interested parties and the Commission.").

[4] *See Universal Service Order*, 12 FCC Rcd at 8912 para. 248.

I. Instructions for Filing

State cost study submissions must consist of a text document and two spreadsheets, as described below. The text document and one spreadsheet are included in this Public Notice. All responses must also include the outputs, in spreadsheet form, discussed below. To facilitate our review of state submissions, states are required to file their submissions in electronic form. We encourage states to file via electronic mail, but submissions may also be made in diskette form.[5] The staff of the Common Carrier Bureau will post electronic mail filings on the Commission's home page on the World Wide Web within 48 hours of their receipt. Diskette submissions will be posted on the World Wide Web as soon as practicable.

Electronic Mail Submissions. Submissions consist of a WordPerfect document, containing the text questions, and an Excel spreadsheet, containing the format for the standardized submission of inputs, discussed below. Submissions must also include a spreadsheet containing the cost study's outputs in the format discussed below. Templates for the text document and the inputs spreadsheet document required for state submissions can be downloaded from the Commission's home page on the World Wide Web at http://www.fcc.gov/ccb/universal_service/welcome.html. In the text document, states are to type in their response to each question beneath the question in the electronic template. In the inputs spreadsheet, states are to fill in the indicated column(s) in the provided template spreadsheet. For the outputs submission, states are to provide an electronic spreadsheet in the format discussed below. The completed documents, in the same versions of Excel and WordPerfect as the provided templates, should be included as attachments to a single piece of electronic mail and sent via the Internet to <lbridge@fcc.gov>. The subject line of the message should identify the state making the filing. States filing by electronic mail should monitor the Commission's universal service home page and, if their submission does not appear within 48 hours of the time it was sent, call Leo Bridge of the Common Carrier Bureau's Universal Service Branch at (202) 418-7377.

Diskette Submissions. Submissions consist of a WordPerfect document, containing the text questions, and an Excel spreadsheet, containing the format for the standardized submission of inputs, discussed below. Submissions must also include a spreadsheet containing the cost study's outputs in the format discussed below. Templates for the text document and the inputs spreadsheet document required for state submissions can be downloaded from the Commission's home page on the World Wide Web at http://www.fcc.gov/ccb/universal_service/welcome.html. In the text document, states are to type in their response to each question beneath the question in the electronic template. In the inputs spreadsheet, states are to fill in the indicated column(s) in the provided template spreadsheet. For the outputs submission, states are to provide an electronic spreadsheet in the format discussed below. The completed documents, in the same versions of Excel and WordPerfect as the provided templates, are to be submitted in electronic form by delivering the files on 3.5" computer diskettes to the Office of the Secretary, Federal Communications Commission, 1919 M Street, N.W., Room 222, Washington, D.C. 20554. If the entire

[5] States that cannot provide their diskettes in electronic form should file a request for waiver of the electronic filing requirement.

submission will not fit on a single diskette, states should divide the submission in a logical fashion onto the smallest practicable number of diskettes. The diskettes should be numbered consecutively and each diskette should also state the total number of diskettes in the submission (e.g., "disk 1 of 3"). *A cover letter must accompany diskette submissions*, and should indicate the number of diskettes in the submission. An additional copy of the diskette and cover letter should also be provided to Sheryl Todd, Common Carrier Bureau, 2100 M Street, N.W., Room 8611, Washington, D.C. 20037.

II. Text Document

A. General and Supporting Information

1. State

2. Date of Filing

3. Contact Person & Telephone Number (also include electronic mail address if available)

4. Hardware Requirements (i.e., disk space, memory requirements, etc.)

5. Software Requirements (i.e., operating system and version, spreadsheet software and version, etc.)

6. General Description of Study (identify whether study is based on the Benchmark Cost Proxy Model (BCPM)[6] or HAI Model[7] (identify version), a study or model prepared by a local exchange carrier (LEC), a state study or model for pricing unbundled network elements, or other source)

7. Supporting Information

(a) Please provide supporting information that includes a detailed description of the proposed cost study and all underlying data, formula, computations, and software associated with the study. The documentation should include a complete listing of algorithms and formulas used in the study and in any pre-processing modules. The

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[6] BCPM was submitted in the Commission's universal service proceeding by BellSouth, U S West, and Sprint. *See generally* Federal-State Joint Board on Universal Service and Forward-Looking Mechanism for High Cost Support for Non-Rural LECs, *Further Notice of Proposed Rulemaking*, CC Docket Nos. 96-45 and 97-160, FCC 97-256 at paras. 16-20 (rel. July 18, 1997) (*FNPRM*). *See also* Submission of the BCPM3 Model by BellSouth Corporation, BellSouth Telecommunications, Inc., U S West, Inc., and Sprint Local Telephone Companies, CC Docket Nos. 96-45 and 97-160 (filed Dec. 11, 1997).

[7] The HAI Model was formerly known as the Hatfield Model. Throughout this Public Notice, we shall refer to the model by its current name, HAI. *See generally FNPRM* at paras. 16-22. *See also* Submission of Hatfield Model v. 5.0 by AT&T and MCI Telecommunications Corp., CC Docket Nos. 96-45 and 97-160 (filed Dec. 11, 1997); Submission of Hatfield Model v. 5.0a by AT&T and MCI Telecommunications Corp., CC Docket Nos. 96-45 and 97-160 (filed January 5, 1998).

supporting information should begin with an overview of the basic approach taken in the cost study, including the study's general methodology and basic assumptions. (Note: If the state cost study is a version of a cost model that is already being considered by the Commission as the basis for determining federal high cost support,[8] it is not necessary to provide all underlying documentation; if the proposal contains changes to the algorithms or inputs of a model under consideration by the Commission, however, such changes must be clearly documented.)

(b) Please identify the sources of all underlying data used in the study and state whether these sources are included with this filing. If not, explain why not.

B. Demonstration That the Cost Study Fulfills the Order's Criteria for State Cost Studies

Criterion 1: ***The technology assumed in the cost study must be the least-cost, most-efficient, and reasonable technology for providing the supported services that is currently being deployed. A model, however, must include the incumbent LECs' wire centers as the center of the loop network and the outside plant should terminate at incumbent LECs' current wire centers. The loop design incorporated into a forward-looking economic cost study or model should not impede the provision of advanced services. For example, load coils should not be used because they impede the provision of advanced services. Wire center line counts should equal actual incumbent LEC wire center line counts, and the study's or model's average loop length should reflect the incumbent carrier's actual average loop length.***

(a) Describe the network technology for which costs are computed, including switch types used, feeder and distribution technology, digital loop carrier devices, and other electronics, if any; type of interoffice technology; and any assumptions, such as maximum copper loop lengths or copper resistance constraints.

(b) Explain how this technology is the least-cost, most-efficient, and reasonable technology currently being deployed for providing the supported services that are reflected in your study. Are technology determinations based on engineering practice rules of thumb or explicit optimization processes? If relying on engineering practices, provide any studies that show that these practices result in a least-cost network. Describe any optimization routines or engineering rules of thumb that are used in the study to achieve a least-cost, most-efficient, and reasonable network design. In your response, please answer the following questions:

(1) Describe how the study determines whether feeder, sub-feeder, and distribution plant should consist of fiber or copper, and whether electronics,

[8] The models presently being considered in the federal universal service proceeding are BCPM, HAI, and the Hybrid Cost Proxy Model (HCPM).

such a T-1 carrier system, are used in the feeder and sub-feeder plant. Also, please describe the gauge(s) of copper considered in the study.

(2) Describe how the model determines the feeder and subfeeder paths that connect distribution areas to the wire center. Does the model rely on current feeder paths or does the model choose a different path? If the study or model determines feeder paths, describe the algorithm that determines the feeder path. Similarly, a model will connect customer locations within a distribution area to the serving area interface. Does the model employ an optimization routine or employ a rule of thumb for determining distribution routes?

(3) Describe how the study determines whether cable should be placed as either aerial, underground (conduit), or buried. Please identify whether the study assumes that plant mix decisions will be affected by zoning restrictions and, if so, how.

(4) Does the study incorporate wireless technology? If so, please describe how.

(5) Does the study incorporate host-remote switching configurations? If so, how? In your explanation, please discuss how host locations are identified and how costs are allocated among customers in wire centers that are part of host-remote relationships.

(c) Describe how the study incorporates assumptions that the incumbent LECs' wire centers are the center of the loop network and that the outside plant terminates at the incumbent LECs' current wire centers.

(d) Describe how the loop design incorporated into the study does not impede the provision of advanced services while still meeting the criterion in (b), above.

(e) Describe how distances are measured in the model (e.g., does the model use airline distances, adjusted airline distances, rectilinear distances, or road distances)? Please identify in each portion of the model in which a particular distance metric is used and why that metric was selected.

(f) Do wire center line counts equal actual incumbent LEC wire center line counts? If so, and if a closing factor is used to achieve this equality, describe the size of the closing factor and how it is used in the study. If the study's wire center line counts do not equal actual incumbent LEC wire center line counts, explain why not.

(g) Does the study's average loop length reflect the incumbent LEC's actual average loop length? If not, explain why not.

(h) Please describe how the study determines customer location. Specify the data that were used to determine the number and location of customers. In addition, please describe in detail if the study locates customers in grids, clusters, census blocks, census

block groups, or other areas smaller than a wire center. How does the study identify serving areas?

(i) How does the cost study determine the cost of the outside plant from the wire center to the customer locations identified in (g)? Does the cost study estimate the costs of a forward-looking network, or does the cost study rely on a loop length study? If the cost study relies on a loop length study, please describe how the cost study relies on the loop length study and provide the loop length study as part of the documentation provided in response to II.(7)(a), above, including a discussion of the sampling methods used in the loop length study. Also, if a loop length study is used to estimate forward-looking costs, please compare the mix of loop technologies in the loop length study sample to the mix of technologies in the loops assumed by the cost study. If the mix of loop technologies assumed in the cost study is based on the mix of technologies in the sample, please justify the use of this assumption.

(j) If the cost study meets criterion 1 in any way not captured by (a) through (h), please explain.

Criterion 2: ***Any network function or element, such as loop, switching, transport, or signaling, necessary to produce supported services must have an associated cost.***

(a) Does the study contain costs associated with all network functions or elements (such as loop, switching, transport, or signaling) necessary to produce supported services?

(b) What non-supported services, if any, are currently included in your cost study, and are the costs associated with provision of advanced services included in your calculation of cost?

(c) If the cost study meets criterion 2 in any way not captured by (a) and (b), please explain.

Criterion 3: ***Only long-run forward-looking economic cost may be included. The long-run period used must be a period long enough that all costs may be treated as variable and avoidable. The costs must not be the embedded cost of the facilities, functions, or elements. The study or model, however, must be based upon an examination of the current cost of purchasing facilities and equipment, such as switches and digital loop carriers (rather than list prices).***

Describe how the costs used in the study represent long-run, forward-looking costs. In particular, describe and verify how the costs of facilities and equipment used in the study reflect the current costs of purchasing those facilities and equipment.

Criterion 4: ***The rate of return should be either the authorized federal rate of return on interstate services, currently 11.25 percent, or the state's prescribed rate of return for intrastate services.***

(a) What rate of return is used in the cost study?

(b) Please provide an explanation of the basis for the rate of return used if it is different from the authorized federal rate of return on interstate services. If available, please identify any documents (e.g., commission orders) supporting the value used in the study.

(c) If the cost study meets criterion 4 in any way not captured by (a) and (b), please explain.

Criterion 5: ***Economic lives and future net salvage percentages used in calculating depreciation expense should be within the FCC-authorized range and use currently authorized depreciation lives.***

Please identify the depreciation rates and future net salvage percentages used in the cost study.

Criterion 6: ***The cost study or model must estimate the cost of providing service for all businesses and households within a geographic region. This includes the provision of multi-line business services, special access, private lines, and multiple residential lines. The inclusion of multi-line business services and multiple residential lines will permit the cost study or model to reflect the economies of scale associated with the provision of these services.***

Describe how the study takes into account the cost of providing service for all businesses and households within a geographic region, including the provision of multi-line business services, special access, private lines, and multiple residential lines per household.

Criterion 7: ***A reasonable allocation of joint and common costs should be assigned to the cost of supported services.***

Describe how the study's methodology assigns a reasonable allocation of joint and common costs to the cost of supported services. What is the amount of common costs attributed to supported services, and what percentage does this represent of total common costs as identified in the study or model? Please explain how this amount was determined. Specifically, please identify how line-side port costs are identified as a portion of total switching costs.

Criterion 8: ***The cost study or model and all underlying data, formulae, computations, and software associated with the model should be available to all interested parties for review and comment. All underlying data should be verifiable, engineering assumptions reasonable, and outputs plausible.***

(a) Please identify any underlying data, formulae, computations, or software used in the study that are not available for review and comment, and explain why they are unavailable.

(b) Please describe what steps were taken to determine that the study's outputs are plausible.

(c) Standardized presentation of outputs. If the state cost study is based on a version of the HAI model, please file: the universal service calculation, cost summary, cost of network elements, and USOA detail breakdown (HAI 5.0 only) reports. If the state cost study is based on a version of BCPM, please file: the area-wide summary, key elements, aggregate support summary and plant summary reports. If the state cost study is based on neither BCPM nor HAI, please provide outputs in either of the BCPM or HAI formats just mentioned, or provide investment and expenses per study area by USOA accounts or ARMIS rows, and show whether and how cost calculations differ across geographic areas.

(d) If the cost study meets criterion 8 in any way not captured by (a) through (c), please explain.

Criterion 9: ***The cost study or model should include the capability to examine and modify the critical assumptions and engineering principles. These assumptions and principles include, but are not limited to, the cost of capital, depreciation rates, fill factors, input costs, overhead adjustments, retail costs, structure sharing percentages, fiber-copper cross-over points, and terrain factors.***

(a) Please describe the extent to which and how the user can examine and modify the cost study's critical assumptions and engineering principles.

(b) Standardized presentation of inputs. Please provide the input values used in your cost study using the attached Excel spreadsheet document. If your study uses input values that are not identified in the Excel document, please add them to the end of the list in the appropriate category. You may also provide the standard presentation of inputs in electronic form in an identical spreadsheet prepared using any other commercially-available spreadsheet software.

(c) If the cost study meets criterion 9 in any way not captured by (a) and (b), please explain.

Criterion 10: ***The cost study or model must deaverage support calculations to the wire***

center serving area level at least, and, if feasible, to even smaller areas such as a Census Block Group, Census Block, or grid cell in order to target universal service support efficiently.

(a) Describe the manner in which the study disaggregates investment calculations to small geographic areas, such as wire centers, census block groups, census blocks, or grid cells and identify the level to which cost calculations are disaggregated. For example, please describe how costs that are shared among customers in different geographic areas, such as feeder structures, are allocated.

C. Demonstration that the Cost Study Fulfills Other Requirements of the *Universal Service Order*

1. ***"In order for the Commission to accept a state cost study submitted to [the Commission] for the purposes of calculating federal universal service support, that study must be the same cost study that is used by the state to determine intrastate universal service support levels pursuant to section 254(f)."***[9]

If your state has an intrastate universal service support mechanism for non-rural LECs, please demonstrate that the cost study being submitted for the purpose of calculating federal universal service support is the same cost study that will be used by your state to determine intrastate universal service support levels pursuant to Section 254(f) of the Telecommunications Act of 1996.

2. ***"We also encourage a state, to the extent possible and consistent with the above criteria, to use its ongoing proceedings to develop permanent unbundled network element prices as a basis for its universal service cost study."***[10]

Please explain the interrelationship, if any, between this universal service cost study and the cost study that will be used by your state in developing permanent prices for unbundled network elements.

Action by the Chief, Common Carrier Bureau

Attachment (Inputs spreadsheet)

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[9] *Universal Service Order*, 12 FCC Rcd at 8916 para. 251.

[10] *Universal Service Order*, 12 FCC Rcd at 8916 para. 251.